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25 October, 1983

THE ROCKY ROAD TO 1990

A Staff Paper on
Economic Development Priorities.

Policy Formulation Branch
Ministry of State for Economic Development

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INTRODUCTION

1. This paper is designed to provoke debate and to serve as the basis for discussion of the broad issues facing the Canadian economy over the next decade.

2. It draws on ongoing analytical and forecasting work undertaken in MSED; on the Provincial Economic Development Perspectives (EDPs); and on a wide range of forecasts and analyses from departments, from the economic and business press, and from independent forecasting units in Canada, the US and Europe.

3. The first main section of this paper, entitled "The Scope of the Challenge", sets the context. It examines the world economic and technological environment within which Canada will have to operate, and also forecasts labour force growth, thus setting an employment challenge for the economy.

4. The next five sections contain the major policy analysis in the paper, under five headings:

- (a) Structural Change
- (b) The Business Environment
- (c) Social Issues
- (d) Locational Issues
- (e) Fiscal Concerns

In each of these sections, the major issues are set out and discussed, and, in most cases, some general policy conclusions are arrived at.

5. Finally, a "Conclusions" section summarizes the broad policy messages that emerge from this analysis. No attempt is made here to translate these into specific policy proposals or program proposals. If any sort of agreement can be reached on the broad issues, the next stage will be for MSED and particularly for individual departments to move into a more detailed level of policy and program development, aiming at new initiatives and changes in existing activities that might be brought forward for action in 1984, 1985 or even later.

THE SCOPE OF THE CHALLENGE

Forecast Technological and Economic Context

6. Figure I illustrates the major technological changes which may occur over the next decade.

7. New technologies must not only be developed, they must also have a market. The table includes both technology-driven and demand-driven changes, and leads to the following broad predictions:

- (a) the technology with the greatest impact over the next decade will be electronics. It will pervade all human activities from factory to home, from computerized machinery to video-shopping;

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FIGURE 1: FORECAST NEEDS OF TECHNOLOGICAL ADVANCE

DEMAND ECONOMIC INCENTIVES FOR TECHNOLOGY	NEW TECHNOLOGIES				ESTABLISHED TECHNOLOGIES	
	ELECTRONICS	BIO-TECHNOLOGY	MATERIALS	ENERGY	TRANSPORTATION	
Save energy	Telecommunications - electronic mail - teleconferencing	Fuel from trees and agricultural products Nitrogen-fixation	Composites Wood-based materials	Conservation and alternative energy Hydrogen "Breeder" nuclear Improved coal using technologies Shale and heavy oil conversion Construction techniques	Dirigibles Wind assisted ocean vessels Fuel efficient planes Fuel efficient cars and trucks Light transit	
Save resources	Fibre optics	Plant genetics Aquaculture Animal genetics Minerals leaching Single cell protein Biological pest- icides	New moulding tech- niques Composite woods			
Increase productivity	CAD/CAM Robotics Industrial lasers Industrial and scientific equip- ment Office Automation Videotex	Material separation techniques "Bio-alloys"	Temporary shelters Single crystal materials		Two pilot cockpits Automated railway controls	
Develop new products	Data services Home computers Security Systems Electronic games Video recording and playback Pay TV	Medical procedures - transplants - organ repair Pharmaceuticals	Glassy metals	Rechargeable batteries low price small solar cells	Electric city cars	

- (b) saving energy and increasing productivity are the two factors providing the most demand-pull for technological change. Electronics can help meet both these demands simultaneously, and this will increase its rate of application;
- (c) from electronics will arise a large market for software and for "content" industries (e.g. data bases; Telidon pages; broadcast programs; computer-aided learning);
- (d) on a global scale, productivity increases will tend to decrease employment, while new product development will increase employment opportunities. The table suggests a trend in favour of the former, but this sort of forecast always understates the opportunities for new products and related output growth, because entirely new goods and services cannot be easily forecast;
- (e) nevertheless, increasing productivity is the basis for increasing output per capita and hence for increasing incomes. At the national scale, productivity improvement is essential to maintaining competitiveness.

8. The Western economies can be seen as being at an in-between stage with respect to major economic/technological cycles. The last set of technologies (automobiles, airplanes, assembly lines, synthetic materials, etc.) has now levelled off in terms of both the rate of product innovation and the rate of demand growth. Japan and Third World and Soviet bloc nations have moved into the market. At the same time, a new wave of technologies is arriving, including micro-electronics, satellites, fibre-optics, and bio-technology. In the early stages, these technologies will be applied first as process technologies, increasing the productivity of present business activities and changing or adding on to existing products (e.g. digital watches, electronic ignition). Later, waves of new products will be developed, leading to further economic growth.

9. The new sectors, such as computers, electronic machine tools, alcohol from biomass, new drugs and so on, will grow very rapidly. But they will have technologically sophisticated production processes. This means their productivity will be high. It also means that most new jobs will call for new skills. In the traditional sectors, the rate of productivity increase is, if anything, accelerating, using robots to compete with cheap labour. The net effect is a large loss of jobs in these traditional industries. This has, until recently, led only to a lack of job growth in these sectors, but through the coming decade the job losses will probably be large, from one-quarter to one-half of the existing level of direct employment in some of these industries. (This will be true in Japan

and Europe as well as in North America, the exact level depending on the marketing acumen and level of design and process innovation of individual firms.) It is anticipated that employment in some of the related services will dwindle too, with such changes as 2-seat cockpits on jetliners and self-serve gas stations.

10. It now seems likely that the rate of growth of high technology industry will largely be determined by the availability of a highly skilled labour force, as is already true in the computer software industry. Because of resistance to change on the part of individuals and institutions, and because of limited relevant capacity in the educational and training systems, this constraint could be a severe one for the next 5-10 years.

Forecast World Economic Context

11. At this time, it is difficult to forecast whether the world will go into economic decline (with nations going bankrupt, downward oil price spiral, protectionism rampant etc.) or whether recovery will indeed be achieved. However, it seems quite evident that, regardless of the path that is followed, the competitiveness of world markets will increase.

12. Factors pushing in this direction include the emergence of Newly Industrialized Countries; the growth of Eastern Bloc exports; the increased use of automation and other cost-saving technologies; and the increased role of state financing to stimulate exports and support new product development.

13. As a nation largely dependent on trade, and as a price-taker in most commodities, Canada has a strong interest in maintaining world trade at a high level and in its being as free as possible.

14. Economic analysis would show that most nations would be better off with freer trade, but there remain strong political pressures for protectionism.

15. The chief concern is that employment prospects are not good. This is not only true in the short-term, with the recession continuing, but almost all European nations have published economic studies that show little or no employment growth. The widely respected Economist Intelligence Unit reported.

.... it seems fairly clear that the OECD countries will not, under any foreseeable circumstances, be able to generate sufficient jobs (on the basis of the conventional definition) to prevent their unemployment ratios from rising

16. While it is widely understood by economists that protectionism will bring retaliation and ultimately worsen the situation, governments everywhere are under strong political pressure to "do something", however futile, to resist the spectre of more unemployment. This short-term pressure could well dominate more farsighted views in many nations, and thus lead to more

protectionism, less trade and a severe world recession or depression.

17. Even if a recovery is achieved and supported, few forecasters expect OECD GNP growth to average much better than 3% per annum.

The Canadian Labour Force

18. The forecast size and age composition of the Canadian population is as follows:

<u>Age Group</u>	<u>1981</u> (million)	<u>1991</u>
Under 15	5.5	5.6
15-64	16.5	17.5
65 and over	2.3	2.9
TOTAL	24.3	26.0

19. The male participation rate is forecast to remain at 78%. The female participation rate is forecast to rise from the present level of 52% to at least 55% and probably 60% by 1991. The Labour Force composition would be as follows:

	<u>Female</u>	<u>Male</u> (million)	<u>Total</u>
55% Female P.R.	5.7	7.8	13.5
60% Female P.R.	6.2	7.8	14.0

20. A target for total employment can be set according to which level of labour force is accepted, and what unemployment rate is set as a target. This is shown below:

<u>Unemployment</u> (%)	<u>Labour Force</u> (million)	<u>Employment</u> (million)
7	13.5 14.0	12.6 13.0
10	13.5 14.0	12.2 12.6
12	13.5 14.0	11.9 12.3
15	13.5 14.0	11.5 11.9

21. The employment levels in recent months have been (in millions):

1981 (average)	10.9
1982 (average)	10.6
1982 (3rd quarter)	10.5
1982 (4th quarter)	10.4

22. What this means in general terms is that in order to keep unemployment down to reasonable levels (10% or less), at least 2 million jobs will have to be added to total employment over the next eight years.

23. Before becoming too disheartened, it is worth remembering that over the 1970s, total employment grew by almost 3 million (from 8.1 million in 1971 to 10.9 million in 1981). However, as already discussed, there are good reasons to believe that performance over this coming period will be much weaker, with growth rates of 2-3%, with production technologies affecting both goods-and service producing sectors, and tougher international competition forcing their rapid adoption.

24. This all suggests that the challenge facing economic development in Canada over the next few years is likely to be a tough one.

STRUCTURAL CHANGE

General

25. Much the strongest theme that arises from current analysis of our economic situation is that Canada is locked into a lengthy and costly process of structural change. To a large extent this has been disguised by the cyclical impact of the current recession, but it is now becoming increasingly apparent that many of the jobs that have been lost will not be recovered when the overall economy recovers.

26. What is particularly disturbing about these structural changes is that they affect virtually every sector of the national economy, from agriculture and mining to automobile manufacturing and gas stations. Some examples which show the scope of this are:

- i) the changing shape of the world grain market, with the EEC becoming a major exporter;
- ii) the decline in world demand for asbestos and for uranium, largely because of health and environmental concerns;
- iii) the serious problems of the fishery, especially on the East Coast;
- iv) depletion and rising production costs for many mineral deposits;
- v) the declining employment in "mature" manufacturing sectors such as clothing, footwear, appliances, automobiles and farm machinery;
- vi) the slowdown in employment growth in business and financial services;
- vii) concern about resource supply and about the efficiency of existing plants in the forest sector;

- viii) the rapid growth of computer-related services;
- ix) new, emerging markets for TV program production, and for video services such as Telidon;
- x) decreased demand for services to the young, along with increased demand for services to the elderly;
- xi) continued long-term demand for domestic energy, especially liquid fuels, although total demand is not now growing.

Underlying Causes

27. There are three main reasons for the extent of structural change now taking place.

- i) New technologies, especially micro-electronics, which have increased output per worker and reduced labour demand not only in manufacturing but also in business and financial services;
- ii) Changes in world supply patterns, in particular the emergence of Newly Industrialized Countries in many areas of manufacturing; the increased grain supply capacity of Europe; and the development of new supply sources in the Third World for many minerals; along with increasing supply costs for many Canadian goods, especially forest products and minerals;
- iii) Changes in world demand patterns, including near-saturation of Western markets for automobiles and appliances; successful energy and other resource conservation efforts; and environmental concerns which have led to demand declines in asbestos and uranium.

28. None of these factors seems likely to diminish over the period to 1990. Rather, it seems that the impact of micro-electronics will become more widespread; and the competitive pressures from the EEC, the Eastern bloc, and the Third World are expected to increase, often with extensive state support through procurement, financial assistance, export credits and other means.

Impact

29. The extent of structural change will be substantial. Its negative impact is causing the most concern, as it seems likely that one-quarter to one-half of existing (1981 levels) jobs in manufacturing could be lost by 1991. Also, up to a quarter of existing jobs in business and financial services could be lost too.

30. However, it must be realized that this is not radically different from what happened over the 1970s and even through the 1960s. There were major job losses in those decades too: in clothing; in agriculture; in coal mining; in steel production; in appliances; in railroads; in defence; and even in the automobile industry. There are three major differences now.

31. First, the lengthy recession has largely halted new job creation in both the private and public sectors, and so the job losses dominate the picture.

32. Second, the new technologies are both labour-saving and capital-saving. This means that the jobs in direct production are not offset by jobs in supply industries such as machinery, machine tools, steel, aluminum, etc.

33. Third, the flexibility of the total economic system (workers; managers; labour; and government) seems to have been reduced, and so the ability to respond to change in opportunistic terms seems to have diminished, to be replaced by a more defensive and even protectionist attitude.

34. Of particular concern is the perception that Canadian industry, especially in areas of traditional strength, is not investing in new technologies to improve productivity, and hence to retain its competitive position.

35. It is also of concern that the spirit of enterprise seems to have diminished, and so the number of small, new firms is not as great as is required if new jobs are to be created to replace those being lost. (This issue is addressed further in the section below on the Business Environment.)

36. There has also emerged a strong sense of parochialism, which manifests itself in the political demand for providing jobs where the people are. Regional development efforts could increasingly come into conflict with national economic priorities, if this rather inflexible view of inter-regional equity is maintained. (This matter is addressed in the later section on Locational Issues.)

37. However, even if these factors can be overcome, it seems likely that there will be substantial economic change and disruption, and continued high unemployment (above 10%) through the medium term. The industrial structure of Canada in 1991 will likely be less represented in manufacturing and business services; will still rely on resources for a large portion of exports; and will have more of the labour force employed in personal services and in technology-related fields.

Sources of New Jobs

38. There are forecast to be three main sources of new jobs over the medium term.

- i) Large Resource Developments, in particular, frontier oil and gas, some coal mining, heavy oil and tar sands

projects, and some other mining and energy projects.

- ii) Technology-related goods and services. This includes computer software and consulting, telecommunications, perhaps some biotechnology industries and possibly some aerospace.
- iii) Services to People. This includes entertainment, video services of various sorts, fast foods, health care, care of the aged, travel and computerized shopping, home security and personal banking services.

39. Even with a generous allowance for-multiplier effects, it is difficult to see these creating the 3-4 million new jobs that will be required. (2 million to meet labour force growth and 1-2 million to offset losses from structural change.

Issues Arising from Structural Change

40. Protectionism, Productivity and the Rate of Change. How far should government facilitate change and productivity increases, or should it rather protect people and industries from them? The economic argument is very clear on this: productivity is essential to increasing prosperity. Ultimately, if we fail to match the productivity increases of our trading partners, we will lose markets, lose employment and suffer currency devaluation. Strange as it may seem, nowhere is this more important than in the resource sectors, especially forestry, agriculture, fishing and minerals. These are the mainstays of our export trade, and if we fail to be productive in these fields, the costs will be enormous. Yet the problem remains of the dislocation brought by change. As much as possible, this should be met by supporting the individual, and facilitating change, rather than by trying to subsidize declining industries. Experience shows that such industrial subsidies only defer the eventual losses, incur great government expense, and create a population that is both dependent and resentful (e.g. Cape Breton; South Shore of Newfoundland). Therefore change should be facilitated rather than resisted, and financial assistance geared to the individual rather than to the declining industry.

41. Resource Management. Much of the upside employment potential and a large part of exports are in the resource sectors, and this will continue to be true. There are a number of supply-side issues that need to be addressed:

- (a) the urgent need for forest management;
- (b) the need for rationalization of the fish processing industry, especially on the South Shore of Newfoundland;
- (c) a growing concern that, given the reduction in OPEC prices, the present royalty/tax arrangements under the NEP will not encourage sufficient new

development of oil reserves and substitutes (i.e. heavy oil; tar sands);

- (d) salinity, soil erosion and other matters directly affecting the productivity of agricultural lands, especially in the Prairies and Southern Ontario.

These matters need to be addressed, and this will usually require federal-provincial consultations and agreement. This item is not unrelated to the preceding one, as what should eventually emerge is a shift in many of these sectors away from subsidy to a more investment-oriented approach.

42. Technology-intensive Industries. How far can these be the salvation for the Canadian economy? All EDPs enthusiastically endorse them. Yet there are very real limits, due to market size, and to the availability of skilled labour. While Canada can increase its presence in these sectors, imports will also increase, and a continued deficit in high-technology trade is inevitable, especially given the nation's resource endowment. Therefore, these activities should be encouraged and supported, but they are not and will not be a cure-all for the nation's economic problems.

43. Also, as the competition in these fields is intense, and firms often rely on high-technology business services, on air travel and on the availability of key professional and technical staff, the potential for high-technology intensive firms to locate in lagging regions is limited, and they will tend to locate instead in established urban centres. (This point is addressed further in the section on Locational Issues.)

THE BUSINESS ENVIRONMENT

44. It is simplistic to put it this way, but new jobs can only be created in three ways:

- (i) by foreign investment;
- (ii) by expansion of existing Canadian-based firms;
- (iii) by the creation of new firms.

If Canada is to respond to the challenge ahead, all of these routes must be pursued, and they must all be supported by a positive business environment.

45. All of the EDPs stress the importance of creating and maintaining a healthy business environment which will encourage investment, innovation, productivity and enterprise. As so much of this depends on government action, there are a number of related issues that arise.

Issues Related to the Business Environment

46. Regulation. The regulatory framework is seen as important. Some regulation is viewed by industry as

an impediment to business; other regulation is seen as a necessary part of the modern economy, and is even seen as helpful to business. Three issues stand out as most important in this broad field.

- (a) NEP and FIRA. These are still seen as hostile to business, and especially to foreign investors. Recent changes have been reassuring to the private sector, but there is still distrust.
- (b) Telecommunications Regulation. The arrival of Pay TV, of Telidon and increased policy debate on broadcasting have led to concern that the regulatory framework for telecommunications needs to be kept up to date, and the field made as competitive as possible, to provide better service and to increase the domestic market for new goods and services, from switching systems to Telidon-based video games.
- (c) Continuing Regulatory Reform. The current efforts to simplify and streamline the regulatory environment should be continued.

47. Tax Framework. Three broad issues arise here:

- (a) Equity. The tax system, both personal and corporate, should favour equity investments to encourage innovation and reduce corporate debt burdens.
- (b) Investment, Productivity and Innovation. The system should be broadly supportive of these activities, through continued use of such schemes as accelerated Capital Cost Allowances and the Investment and R&D tax credits.
- (c) Corporate Tax Reform. It is probably time for a comprehensive review of the corporate tax system, which is now a virtual patchwork quilt of incentives and exceptions. This is a process which should be done in consultation with business and the legal and accounting professions, and should be planned to take place over a 1-2 year time period.

48. Forward Orientation. The European Management Forum report shows Canada's "forward orientation" to be very weak relative to most Western nations. Increased debate about future trends, and increased awareness of technological and market changes is essential to improving national economic performance, especially in fields where technology is changing rapidly. One of the roles of the MacDonald Royal Commission is to look to the future and encourage others to do so too.

49. Outward Orientation. The same study also showed Canada to have a very weak "outward orientation". In the field of trade policy, there remain some critical questions to be answered, especially in light of the growth of protectionism, a possible shift towards regional trading blocs, and the increasing role of "administered trade", especially with Third World nations and the Eastern Bloc.

SOCIAL ISSUES

50. Education and Training. This is emerging as one of the most critical issues, especially with respect to technological change and the development of high-technology industries. Sadly, recent debate on post-secondary education has focussed largely on the fiscal issues; and the government has been more preoccupied with income support and job creation than with its training programs. As a result, policies and programs do not seem to be addressing adequately the urgent needs for more technical training, for more retraining programs, for joint efforts with industry, and for more scientific manpower. This is a central issue which is crucial to future economic development.

51. Labour-Management Relations. The need for increased productivity and the rate of structural change require development of new, more co-operative forms of labour-management relations. This is most crucial at the level of the firm, where labour should be directly involved in corporate planning, especially with respect to new technologies.

52. Impact of Long-Term Unemployment. There is a strong likelihood of sustained unemployment. This creates a wide range of potential social problems, including alcoholism, vandalism, crime, and family breakups. Particularly hard-hit will be the young and the established long-term employees. In addition to preparing to deal with the social symptoms, it might be wise to strengthen seniority provisions for long-term employees, and to provide more training and mobility opportunities for the younger workers.

53. Employment Redefined. There is clearly a need to consider some fairly radical approaches to the employment issue. These might include guaranteed income schemes; work-sharing; radical reduction in the work week; a major reduction in the working year (Canadians work 10-15% more hours per year than Swedes); payment for voluntary work or for housework; or even extensive sabbatical and educational leave allowances.

54. Natives. An extremely high proportion of the young unemployed will be people of native ancestry. This will be particularly the case in the Prairie provinces. The potential exists for considerable problems.

LOCATIONAL ISSUES

55. There are conflicting views on the locational pressures implicit in current structural change.

However, as the trend continues to service sector jobs and to technology-intensive activities, it is likely that economic factors will favour larger, more sophisticated urban centres. This means that employment growth will tend to focus on Southern Ontario, the BC Lower Mainland, the five Prairie Cities, Halifax, and perhaps Montreal, Quebec and St. John's. On balance, this means a trend towards increasing disparities both between regions and within regions.

56. Also, the potential for overcoming this trend is reduced by the relatively footloose nature of many of the new industries. They are internationally footloose. If they do not locate in, say, the Toronto region, they will go to Boston or Atlanta, rather than to Moncton or Brandon.

57. At the same time it must be noted that the impact of structural change is likely to be felt most in Southwestern Ontario, a region which policymakers have, for many years, been able to take for granted.

58. Regional and Urban Specialization. This all likely means that the capacity of governments to influence locational decisions within Canada will be sharply reduced. In many cases, it will be more effective to direct support towards enhancing the prospects of the preferred Canadian location as against a foreign location.

59. Single-industry Communities. There will be particular hardship in single-industry communities where the industry is in decline. As already noted, the emphasis should be on assisting the individuals rather than trying to prop up an uneconomic operation.

60. Supporting Community Enterprise. The history of community enterprise shows the resilience and innovative powers of Canadians. New services and enterprises often grow from the initiatives taken at the grass-roots level. Usually, the key is to be able to provide a small amount of start-up money to get the project launched. In many cases, this is a far more effective response to hard times than capital-intensive works or large industrial subsidies. The decentralization of DRIE, the establishment of FEDCs, and other related changes should make possible a speedier and more flexible response to such initiatives.

FISCAL CONCERNS

61. With slow growth and relatively low commodity prices, the capacity of governments to tax and spend is severely limited.

62. The concern over the size of the deficits has clarified the extent to which governments have not followed countercyclical policies, but have rather run deficits even in good years. This has left governments severely restricted in terms of their ability to boost aggregate demand, as this would raise deficits to unacceptable levels.

63. Also, there has emerged a clear perception that government has not been managing its own affairs efficiently, and in particular has allowed administrative and other overhead to get out of control.

64. A-Base Reduction and Reallocation. Reflecting the rate of change in the economy as a whole, the A-Base of the federal government should be changing too. Traditionally this is primarily done by adding new programs. To restore confidence in its operations, the federal government should consider a long-term plan for reduction of the A-Base. Among other initiatives, this might include:

- (a) a substantial (perhaps as much as 25%) reduction in administration, policy and public information overhead by 1990;
- (b) requiring every department to offer up a substantial reduction in staff and expenditures every year, to create a resource pool for needed new initiatives. (One formula is to require each agency to cut 6% of its budget and add a 5% increment of new activities. "6 and 5, with one for the pot.")

65. Government Productivity. Government should be a leader in adopting the new office technologies, not only increasing government efficiency, but also stimulating demand for Canadian suppliers.

CONCLUSIONS

66. The years ahead will be challenging ones for the Canadian economy and for government policy. Overall, a few key messages emerge:

- (a) change in industrial structure will be the key factor affecting the economy over the medium-term;
- (b) no aspects of the economy can be taken for granted. Indeed, the areas most needing attention over the next few years are the resource sectors and the manufacturing heartland of Southern Ontario;
- (c) in an increasingly competitive world situation, economic policy must be directed above all at economic expansion rather than at redistribution of the economic pie. Hence the importance of the overall business environment;
- (d) redistribution should take place primarily at the level of the individual;

(e) flexibility is the essential ingredient in economic success for the individual, the firm or the community. Hence the emphasis on training, on awareness, on new labour-management mechanisms and on community enterprise;

(f) change will bring with it a range of social issues which must be addressed equally with the strictly economic issues.

67. For a discussion paper, these general conclusions will suffice. In further discussion, refinement and reaction, more detailed and specific responses should arise.

Policy Formulation Branch
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